

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

|                                                                                                             |                                                                 |                                                     |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------|
| Applicant's or agent's file reference<br><b>TP103356/TPU</b>                                                | <b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416                 |                                                     |
| International application No.<br><b>PCT/FI2004/050174</b>                                                   | International filing date (day/month/year)<br><b>24-11-2004</b> | Priority date (day/month/year)<br><b>24-11-2003</b> |
| International Patent Classification (IPC) or national classification and IPC<br><b>See Supplemental Box</b> |                                                                 |                                                     |
| Applicant<br><b>Nokia Corporation et al</b>                                                                 |                                                                 |                                                     |

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
  - a. ☒ (sent to the applicant and to the International Bureau) a total of 12 sheets, as follows:
    - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) \_\_\_\_\_, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:
 

|                                     |              |                                                                                                                                                                 |
|-------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report                                                                                                                                             |
| <input type="checkbox"/>            | Box No. II   | Priority                                                                                                                                                        |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability                                                                |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention                                                                                                                                      |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited                                                                                                                                         |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application                                                                                                                |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application                                                                                                           |

|                                                                                                                                               |                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Date of submission of the demand<br><b>21-09-2005</b>                                                                                         | Date of completion of this report<br><b>23-02-2006</b>                               |
| Name and mailing address of the IPEA/SE<br>Patent- och registreringsverket<br>Box 5055<br>S-102 42 STOCKHOLM<br>Facsimile No. +46 8 667 72 88 | Authorized officer<br><br><b>Oskar Pihlgren /LR</b><br>Telephone No. +46 8 782 25 00 |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI2004/050174

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Cover sheet

**INTERNATIONAL PATENT CLASSIFICATION (IPC):**

**G06F 17/30 (2006.01)**

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI2004/050174

Box No. I Basis of the report

1. With regard to the language, this report is based on:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into \_\_\_\_\_,  
which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b))
- ☐ publication of the international application (Rule 12.4(a))
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-9, 11-19 as originally filed/furnished
- pages\* 10, 10a received by this Authority on 30-01-2006
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- pages \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- pages\* 20-29 received by this Authority on 30-01-2006
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- pages 1-7 as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI2004/050174

**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

|                               |        |             |     |
|-------------------------------|--------|-------------|-----|
| Novelty (N)                   | Claims | <u>1-46</u> | YES |
|                               | Claims |             | NO  |
| Inventive step (IS)           | Claims | <u>1-46</u> | YES |
|                               | Claims |             | NO  |
| Industrial applicability (IA) | Claims | <u>1-46</u> | YES |
|                               | Claims |             | NO  |

## 2. Citations and explanations (Rule 70.7)

Documents cited in the International Search Report:

D1: US 2001031626 A1

D2: WO 02/35417 A1

D3: US 5086452 A

The cited documents represent the general state of the art.

The invention defined in claims 1-46 is not disclosed by any of these documents.

The cited prior art does not give any indication that would lead a person skilled in the art to the claimed method and system for configuration of a terminal. Therefore, the claimed invention is not obvious to a person skilled in the art.

Accordingly, the invention defined in claims 1-46 is novel and is considered to involve an inventive step. The invention is industrially applicable.

register 5 it is determined that the received CPI information cannot be applied as such in the wireless terminal in question or for the user in question. In addition, in the case of such wireless terminals, which do not support the above-presented UAProf function, the WAP gateway  
5 can form this CPI information.

It should also be mentioned that in some cases instead of http protocol it is possible to use wireless http protocol (Wireless http, W-http). However, this as such has no significance in connection with this  
10 invention. In addition, there can be more than one of said indicators URI, but this also has no significance from the point of view of applying the present invention.

It is an aim of the present invention to provide an improved method in  
15 connection with the configuration of a wireless terminal. The invention is based on the idea that in a wireless terminal a change is detected in some capability and on the basis of this, information on this change is sent to the system. Thus, the system takes care of providing parameter preferences corresponding to the new capabilities and of transmitting it  
20 to the wireless terminal in order to configure it. To put it more precisely, the terminal according to the present invention is primarily characterized in that the terminal comprises means for detecting a change in the capabilities of the terminal, means for transmitting information on the change of the terminal capabilities to the device  
25 management server, and means for receiving new parameter preferences corresponding to the changed capabilities sent from the device management server. The system according to the present invention is primarily characterized in that the terminal comprises means for detecting a change in the terminal capabilities, in which case  
30 the system comprises means for transmitting information on the change in terminal capabilities to the device management server, means for determining the parameter preferences corresponding to the changed capabilities, and means for sending the parameter preferences corresponding to the new capabilities to the terminal for  
35 terminal configuring the terminal, and which terminal comprises means

10a

for receiving new parameter preferences sent from the device  
management server. The method according to the present invention is  
primarily characterized in that in the terminal are examined the  
changes in the terminal capabilities, and if a change in terminal  
5 capabilities is detected, information on the changed capabilities is

Claims:

1. A terminal (1) to be used in a system, where there is a device management server (3) and a data transfer network (2) for transmitting information used in connection with configuration between the terminal (1) and the device management server (3), **characterized** in that the terminal (1) comprises means (13, 16, 18, 19) for detecting a change in the capabilities of the terminal, means (13, 15) for transmitting information on the change of the terminal capabilities to the device management server (3), and means (15) for receiving new parameter preferences corresponding to the changed capabilities sent from the device management server (3).
2. The terminal (1) according to claim 1, **characterized** in that it comprises at least one accessory connection (19), in which case said means (13, 16, 18, 19) for detecting change in the terminal capabilities comprise a connection bus (19.1) for detecting whether an accessory (20) has been connected to said accessory connection (19).
3. The terminal (1) according to claim 1 or 2, **characterized** in that at least one user module (17) is installed in it, in which case said means (13, 16, 18, 19) for detecting change in the terminal capabilities comprise a user module connection (18) for transmitting information between the user module (17) and the terminal (1).
4. The terminal (1) according to claim 3, **characterized** in that a user identity is stored in the user module (17), that a user identity read previously from the user module is stored in the terminal (1), in which case in order to determine a change in the terminal (1) capabilities, the user identity stored in the user module (17) and the user identity stored in the terminal (1) are arranged to be compared.
5. The terminal (1) according to claim 3 or 4, **characterized** in that an equipment identity is stored in the terminal (1), that an equipment identity read previously from the terminal is stored in the user module (17), in which case in order to determine a change in the terminal (1)

capabilities, the equipment identity stored in the user module (17) and the equipment identity stored in the terminal (1) are arranged to be compared.

5 6. The terminal (1) according to any of the claims 1 to 5, **characterized**  
in that it comprises means (13, 16) for installing and updating  
applications in a terminal (1) as well as for removing them from the  
terminal (1), in which case said means (13, 16, 18, 19) for detecting  
change in the capabilities of the terminal comprise means (13) for  
10 detecting the installation, update and removal of applications.

7. The terminal (1) according to claim 6, **characterized** in that the  
capability information of the terminal (1) has been provided to the  
terminal (1) in the installed application.

15 8. The terminal (1) according to claim 6 or 7, **characterized** in that it  
comprises means (13, 16) for changing the preferences of the  
application, in which case said means (13, 16, 18, 19) for detecting  
change in the terminal capabilities comprise means (13, 17) for  
20 detecting change in the application preferences.

9. The terminal (1) according to any of the claims 1 to 8, **characterized**  
in that it comprises means (13, 16, 17) for installing and updating a  
service in a terminal (1) as well as for removing it from the terminal (1),  
25 in which case said means (13, 16, 18, 19) for detecting change in the  
capabilities of the terminal comprise means (13, 17) for detecting the  
installation, update and removal of the service.

10. The terminal (1) according to claim 9, **characterized** in that it  
30 comprises means (13, 16, 17) for changing the preferences of the  
service, in which case said means (13, 16, 18, 19) for detecting change  
in the terminal capabilities comprise means (13, 17) for detecting  
change in the service preferences.

35 11. The terminal (1) according to any of the claims 1 to 10,  
**characterized** in that the means (13, 15) for transmitting information



about the change in the terminal capabilities to the device management server (3) comprise message formation means (13) for forming a request message, in which request message is arranged to be transmitted a request for providing parameter preferences to the  
5 terminal (1), and sending means (15) for sending said request message to a data transfer network (2).

12. The terminal (1) according to claim 11, **characterized** in that a request message formed in the message formation means (13) is a  
10 UAPProf message.

13. The terminal (1) according to any of the claims 1 to 12, **characterized** in that from the terminal (1) is arranged to be sent at least the following capability information via a mobile communication  
15 network (2) to a device management server (3):

- a protocol supported by the terminal (1), which can be used in transmitting parameter preferences to the terminal (1),
- information on the manufacturer of the terminal (1),
- information on the model of the terminal (1), and  
20 - information on the software version of the terminal (1).

14. The terminal (1) according to any of the claims 1 to 13, **characterized** in that in the terminal (1) are stored all the parameters stored by the users that have used the terminal (1), as well as the  
25 corresponding user identities, in which case the terminal (1) comprises means (13, 16) for examining whether the previously used user identities and the corresponding parameters are stored in the terminal (1), in which case in the terminal (1) sending information on the capabilities of a terminal to a data transfer network (2) is arranged to  
30 be prevented and the previously stored parameters are arranged to be taken into use.

15. The terminal (1) according to any of the claims 1 to 14, **characterized** in that it is a wireless terminal (1).  
35

16. A system, which comprises a terminal (1), a device management server (3), and a data transfer network (2) for transmitting information used in connection with terminal (1) configuration between the terminal (1) and the device management server (3), **characterized** in that the  
5 terminal (1) comprises means (13, 16, 18, 19) for detecting a change of the capabilities of the terminal, in which case the system comprises means (2, 12) for transmitting the information on the change of the terminal capabilities to the device management server (3), means (4)  
10 for determining parameter preferences corresponding to the changed capabilities, and means (2, 3, 12) for sending the parameter preferences that correspond to the new capabilities to the terminal for configuring the terminal (1), and which terminal (1) comprises means (15) for receiving new parameter preferences sent from the device management server (3).

15 17. The system according to claim 16, **characterized** in that the device management server (3) comprises means (4) for determining the parameter preferences that correspond to the terminal (1) capabilities and for sending them via a data transfer network (2) to the terminal (1).

20 18. The system according to claim 16 or 17, **characterized** in that in the terminal (1) is installed at least one service of a service provider, in which case the terminal (1) is arranged to send information on change of the service preferences to the device management server (3) and  
25 the device management server (3) comprises means for determining the parameter preferences that correspond to the service changed in the terminal (1) from the service provider.

30 19. The system according to claim 18, **characterized** in that determining the parameter preferences is arranged to be performed by sending the information on the change of the service preferences received from the terminal (1) from the device management server (3) to the service provider, in which case the service provider is arranged to perform the terminal (1) configuration.

35

20. The system according to claim 17, 18 or 19, **characterized** in that in the data transfer network (2), the parameter preferences received from the device management server (3) are arranged to be handled by modifying them or by adding new setting to them.
- 5
21. The system according to claim 16, 17 or 20, **characterized** in that the terminal (1) comprises at least one accessory connection (19), in which case said means (13, 16, 18, 19) for detecting change in the terminal capabilities comprise a connection bus (19.1) for detecting whether an accessory (20) has been connected to said accessory connection (19).
- 10
22. The system according to any of the claims 16 to 21, **characterized** in that at least one user module (17) is installed in the terminal (1), in which case said means (13, 16, 18, 19) for detecting changes in the terminal capabilities comprise a user module connection (18) for transmitting information between the user module (17) and the terminal (1).
- 15
23. The system according to claim 22, **characterized** in that a user identity is stored in the user module (17), that a user identity read previously from the user module is stored in the terminal (1), in which case in order to determine a change in the terminal (1) capabilities, the user identity stored in the user module (17) and the user identity stored in the terminal are arranged to be compared.
- 20
24. The system according to claim 22 or 23, **characterized** in that an equipment identity is stored in the terminal (1), that an equipment identity read previously from the terminal is stored in the user module (17), in which case in order to determine a change in the terminal (1) capabilities, the equipment identity stored in the user module (17) and the equipment identity stored in the terminal (1) are arranged to be compared.
- 25
25. The system according to any of the claims 16 to 22, **characterized** in that it comprises means (13, 16) for installing and updating
- 30
- 35

applications in a terminal (1), as well as for removing them from the terminal (1), in which case said means (13, 16, 18, 19) for detecting change in the capabilities of the terminal comprise means (13) for detecting the installation, update and removal of applications.

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26. The system according to claim 25, **characterized** in that capability information of the terminal has been provided to the terminal (1) in the installed application.

10 27. The system according to any of the claims 16 to 26, **characterized** in that the means (13, 15) for transmitting information about the change in the terminal capabilities to the device management server (3) comprise message formation means (13) for forming a request message, in which request message is arranged to be transmitted a  
15 request for providing parameter preferences to the terminal (1), and sending means (15) for sending said request message to a data transfer network (2).

20 28. The system according to claim 27, **characterized** in that a request message formed in the message formation means (13) is a UAProf message.

25 29. The system according to any of the claims 16 to 28, **characterized** in that from the terminal (1) is arranged to be sent at least the following capability information via a mobile communication network (2) to a device management server (3):

- a protocol supported by the terminal (1), which can be used in transmitting parameter preferences to the terminal (1),
- information on the manufacturer of the terminal (1),
- 30 - information on the model of the terminal (1), and
- information on the software version of the terminal (1).

35 30. The system according to any of the claims 16 to 28, **characterized** in that in the terminal (1) are stored all the parameters stored by the users that have used the terminal (1) as well as the corresponding user identities, in which case the system comprises means (13, 16) for

examining whether the previously used user identities and the corresponding parameters are stored in the terminal (1), in which case in the system sending information on the capabilities of a terminal to a data transfer network (2) is arranged to be prevented and the  
5 previously stored parameters are arranged to be taken into use.

31. The system according to any of the claims 16 to 30, **characterized** in that the terminal (1) is a wireless terminal (1).

10 32. A method in the configuration of a terminal (1), where information used in configuration is sent from the terminal (1) to the device management server (3), **characterized** in that in the terminal (1) are examined changes in the capabilities of the terminal, and if a change is detected in the terminal (1) capabilities, information on the changed  
15 capabilities is transmitted to the device management server (3), where the preferences of the parameters that correspond to the changed capabilities are determined, and information on the new parameter preferences is sent to the terminal (1), where the configuration of the terminal is performed according to the new parameter preferences.

20 33. The method according to claim 32, **characterized** in that in the device management server (3) are determined parameter preferences that correspond to the terminal (1) preferences, and the parameter preferences are sent to the terminal (1).

25 34. The method according to claim 33, **characterized** in that in the data transfer network (2) the parameter preferences received from the device management server (3) are handled by modifying them or by adding new preferences to them.

30 35. The method according to claim 32, 33 or 34, **characterized** in that in the terminal (1) there is at least one accessory connection (19), in which case in order to detect changes in the terminal capabilities, it is examined whether an accessory (20) has been connected to the  
35 accessory connection (19).

36. The method according to any of the claims 32 to 35, **characterized** in that at least one user module (17) is installed in the terminal (1), in which case in order to detect changes in the terminal capabilities, information is transmitted between the user module (17) and the  
5 terminal (1).

37. The method according to claim 36, **characterized** in that a user identity is stored in the user module (17), that a user identity read previously from the user module is stored in the terminal (1), in which  
10 case in order to determine a change in the terminal (1) capabilities, the user identity stored in the user module (17) and the user identity stored in the terminal are compared.

38. The method according to claim 36 or 37, **characterized** in that an  
15 equipment identity is stored in the terminal (1), that an equipment identity read previously from the terminal is stored in the user module (17), in which case in order to determine a change in the terminal (1) capabilities, the equipment identity stored in the user module (17) and the equipment identity stored in the terminal (1) are compared.

20 39. The system according to any of the claims 32 to 36, **characterized** in that the terminal (1) comprises means (13, 16) for installing and updating applications in a terminal (1) as well as for removing them from the terminal (1), in which case the detection of change in the  
25 capabilities of the terminal is performed in connection with the installation, update and removal of applications.

40. The method according to claim 39, **characterized** in that the capability information of the terminal is provided to the terminal (1) in  
30 the application to be installed.

41. The method according to any of the claims 32 to 40, **characterized** in that in the terminal (1) is formed a request message for transmitting information on the change of terminal capabilities to the device  
35 management server (3), in which case a request for providing

parameter preferences in the terminal (1) is transmitted in the request message.

42. The method according to claim 41, **characterized** in that the request message is an UAPProf message.

43. The method according to any of the claims 32 to 42, **characterized** in that from the terminal (1) is sent at least the following capability information to a device management server (3):

- 10 - a protocol supported by the terminal (1), which can be used in transmitting parameter preferences to the terminal (1),
- information on the manufacturer of the terminal (1),
- information on the model of the terminal (1), and
- 15 - information on the software version of the terminal (1).

44. The method according to any of the claims 32 to 42, **characterized** in that in the terminal (1) are stored the parameters stored by all the users that have used the terminal (1), as well as the user identities corresponding to them, in which case it is examined in the method, whether the previously used user identity and the corresponding parameters are stored in the terminal (1), in which case if the examination proves that a previously used user identity and the corresponding parameters are stored in the terminal (1), sending information on the terminal capabilities from the terminal (1) to the data transfer network (2) is prevented and the previously stored parameters are taken into use in the terminal (1).

45. A method for providing configuration information to a terminal (1), where information used in configuration is sent from the terminal (1) to the device management server (3), **characterized** in that in the terminal (1) are examined changes in the capabilities of the terminal, and if a change is detected in the terminal (1) capabilities, information on the changed capabilities is transmitted to the device management server (3), where the preferences of parameters that correspond to the changed capabilities are determined, and information on the new parameter preferences is sent to the terminal (1), where the

configuration of the terminal is performed according to the new parameter preferences.

46. A computer software product to be used in the configuration of a terminal (1), which computer software product is provided with machine executable program commands for sending information used in configuration from the terminal (1) to a device management server (3), characterized in that the computer software product comprises machine executable program commands for determining change in the terminal (1) capabilities, for sending information on the changed capabilities of a terminal (1) to the data transfer network to be delivered to the device management server (3), for receiving new parameter preferences sent from the device management server (3) to the data transfer network (2), and for configuring the terminal according to the new parameters.